
PRE-CHECK (PC) DESIGNS ENERGY COMPLIANCE REVIEW

IR N-1

References:

Title 24, Part 6: 2007 California Energy Code
2005 Building Energy Efficiency Standards

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Discipline: Energy Compliance

This Interpretation of Regulations (IR) is intended for use by the Division of the State Architect (DSA) staff, and as a resource for design professionals, to promote more uniform statewide criteria for plan review and construction inspection of projects within the jurisdiction of DSA, which include State of California public elementary and secondary schools (grades K-12), community colleges, and state-owned or state-leased essential services buildings. This IR indicates an acceptable method for achieving compliance with applicable codes and regulations, although other methods proposed by design professionals may be considered by DSA.

This IR is reviewed on a regular basis and is subject to revision at any time. Please check the DSA web site for currently effective IR's. Only IR's listed in the document at <http://www.dsa.dgs.ca.gov/Pubs/default.htm> (click on "DSA Interpretation of Regulations Manual") at the time of plan submittal to DSA are considered applicable.

Purpose: This Interpretation of Regulations (IR) clarifies requirements for the energy compliance review of Pre-Check (PC) designs submitted to the Division of the State Architect (DSA) for approval. This IR completely supersedes and replaces previously issued DSA Bulletin "PRE-CHECK (PC) DESIGNS - ENERGY COMPLIANCE REVIEW," revised September 15, 2003.

BACKGROUND: All public school facility construction within the State of California, including relocatable classrooms, must comply with all Parts of Title 24 (California Building Standards Code), including the energy efficiency standards contained in Part 6, Title 24, California Energy Code. The provisions of Part 6, Title 24 apply to the building envelope, space-conditioning systems, water-heating systems, and lighting systems of buildings.

1. PC Designs Subject to Energy Compliance Review:

Any PC Design application submitted to DSA for approval of compliance with Title 24, current edition, and containing buildings with space-conditioning systems, water-heating systems, and/or lighting systems is subject to energy compliance review.

Any project application that utilizes a PC design will be reviewed at the time of submittal to DSA to determine whether or not the PC design is approved for the climate zone in which the project is located.

If the PC design is not approved for the project's climate zone, the project applicant and the PC owner will be notified by DSA that approval of the PC design for the climate zone in which the project is located is required prior to approval of the project application.

Review and approval of the PC design for the project's climate zone will be processed as a revision. The approved revision to the PC design must be incorporated into the project application.

2. Energy Compliance Documentation Requirements:

2.1 For any PC design subject to energy compliance review, the PC application submitted to DSA must include documentation identified in Section 3.2 below.

2.2 Energy compliance documentation must be approved for each climate zone in which a project utilizing the PC is anticipated to be located, as determined by the PC owner. The climate zones for which the PC has been designed shall be noted on the PC plan cover sheet (see Section 2.3).

Any building design that complies with the worst-case orientation (see Section 2.3) in climate zones 14, 15 and 16 may be approved, from an energy standpoint, for placement in any climate zone. Climate zones 14, 15 and 16 represent the most severe types of weather (both heating and cooling) in California. Complying with code in climate zones 14, 15 and 16 does not require or prevent modeling the PC in other climate zones. Modeling and complying with code in other climate zones may allow for flexibility in the choice of insulation, fenestration and heating and cooling system equipment. Information regarding the design variations for all climate zones or groups of climate zones for which the PC complies must be provided in a table on the PC plan cover page/sheet as applicable. When modeling for particular climate zones use the reference cities listed in the 2005 Building Energy Efficiency Standards, Joint Appendix II on page II-3.

- 2.3** For each climate zone considered, energy efficiency analysis must demonstrate compliance for the highest energy use (i.e. worst-case) orientation for each building within the PC Design. This worst-case orientation may be determined by performing rotations about the compass in 30 degree increments starting at 0 degrees for each building.
- 2.4** When a PC design contains multiple building configurations or variations of the building envelope, space-conditioning systems, lighting systems, or occupancy, the documentation author must define, in writing, the worst-case assumptions used for the energy analysis, including which orientation(s) were modeled and the worst-case orientation using the compliance method submitted, and which occupancy or occupancies are to be approved.
- 2.5** When a unique PC design contains multiple sizes, the smallest and the largest potential size should be modeled at 30 compass intervals in each Climate Zone for which the PC seeks approval (per 2.3 above). The electronically-generated computer file(s) that produced the worst case energy use results for each climate zone for each unique PC design configuration that is modeled should be provided to DSA. In addition, a spreadsheet or table showing the data (standard and proposed design kBTU/ft²/yr) results from all the 30 degree simulations per climate zone in which each unique PC design configuration was modeled must be provided to DSA.

3. Process for Review of Energy Compliance of PC Designs:

For any PC design application designed to conform to Title 24, Part 6, current edition, and for any revision affecting the energy efficiency compliance of a previously approved PC design, the following steps must be completed:

- 3.1** Upon receipt of a submittal of a PC design application or revision of an approved PC Design, DSA will issue the DSA "Pre-Check (PC) Energy Review Notification" within 10 working days to the PC owner or Design Professional in General Responsible Charge of the PC design.

This notification provides contact information for Division of the State Architect Energy Plan Review (DSAENPR) team reviewer that will review and verify the PC's energy efficiency compliance.

- 3.2** The PC owner or Design Professional must submit directly to DSAENPR all documentation that is specifically identified and referred to in Part 6 of [Form DSA-3](#). The PC owner shall summarize which climate zone(s) are to be approved, which

orientation(s) were modeled and the worst-case orientation using the compliance method submitted, and which occupancy or occupancies are to be approved.

- 3.3** Mixed occupancies within designs should be modeled for lighting as designed, except where the PC Owner wants approval of other occupancies with differing lighting power densities. In the latter case, one computer model could be used for approval but the base case model must contain the lowest proposed lighting power density and the proposed case model must contain the highest lighting power density.
- 3.4** Mixed occupancies within designs should be modeled for minimum ventilation as designed, except where the PC owner wants approval of other occupancies which have higher minimum ventilation rates. In the latter case, the highest minimum ventilation rates for the worst-case occupancy desired by the PC owner will be used for determining compliance.
- 3.5** During the review phase, the DSAENPR may contact the Design Professional to request additional information or to address questions regarding the PC's energy compliance.
- 3.6** Upon approval of the energy compliance documentation by the DSAENPR, the PC owner or Design Professional will receive an approved Energy Compliance Review form (ECR-2). The approved DSA ECR-2 form will indicate the climate zone(s) in which the PC Design complies with efficiency standards, and any other restrictions required to ensure that the PC Design meets energy efficiency standards.
- 3.7** A plan sheet entitled "Title 24 Part 6" should be included in the plans. This sheet should contain copies of the approved and signed PERF forms (parts 1 and 2) and also the Mandatory Measures sheets for lighting, mechanical and envelope that reflect the computer-generated or hand-written output from the approved energy Title 24 compliance documentation for each unique design.
- 3.8 Fees:** Costs incurred by DSA to review and approve energy compliance shall be recovered from the PC Owner or Manufacturer. Energy review costs will be included in the DSA plan review invoice issued upon completion of the PC design back-check.

Any questions regarding this Bulletin may be directed to the DSAENPR lead person at 916-327-0535.